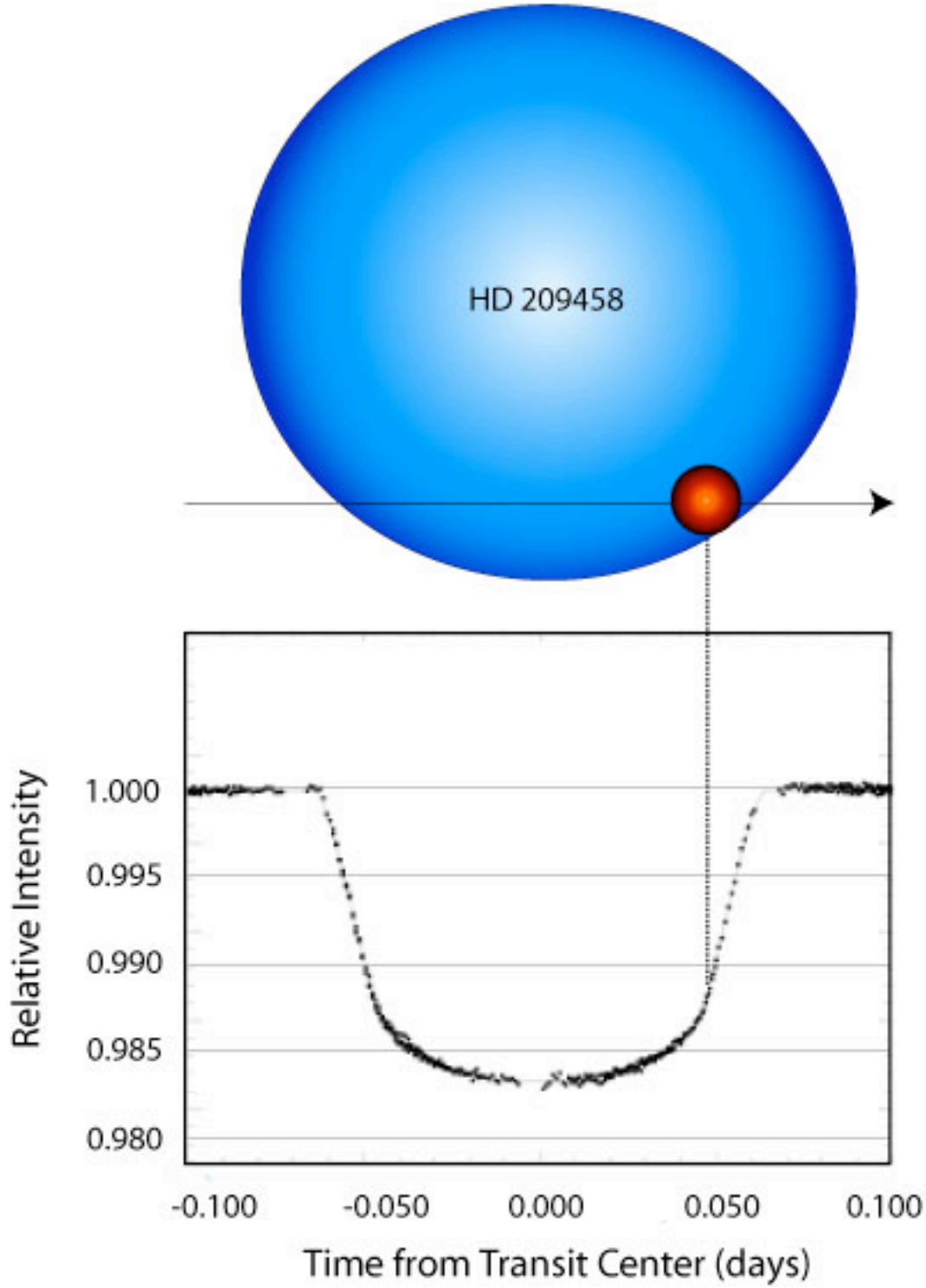
Workshop Review: Eight Years of Transits

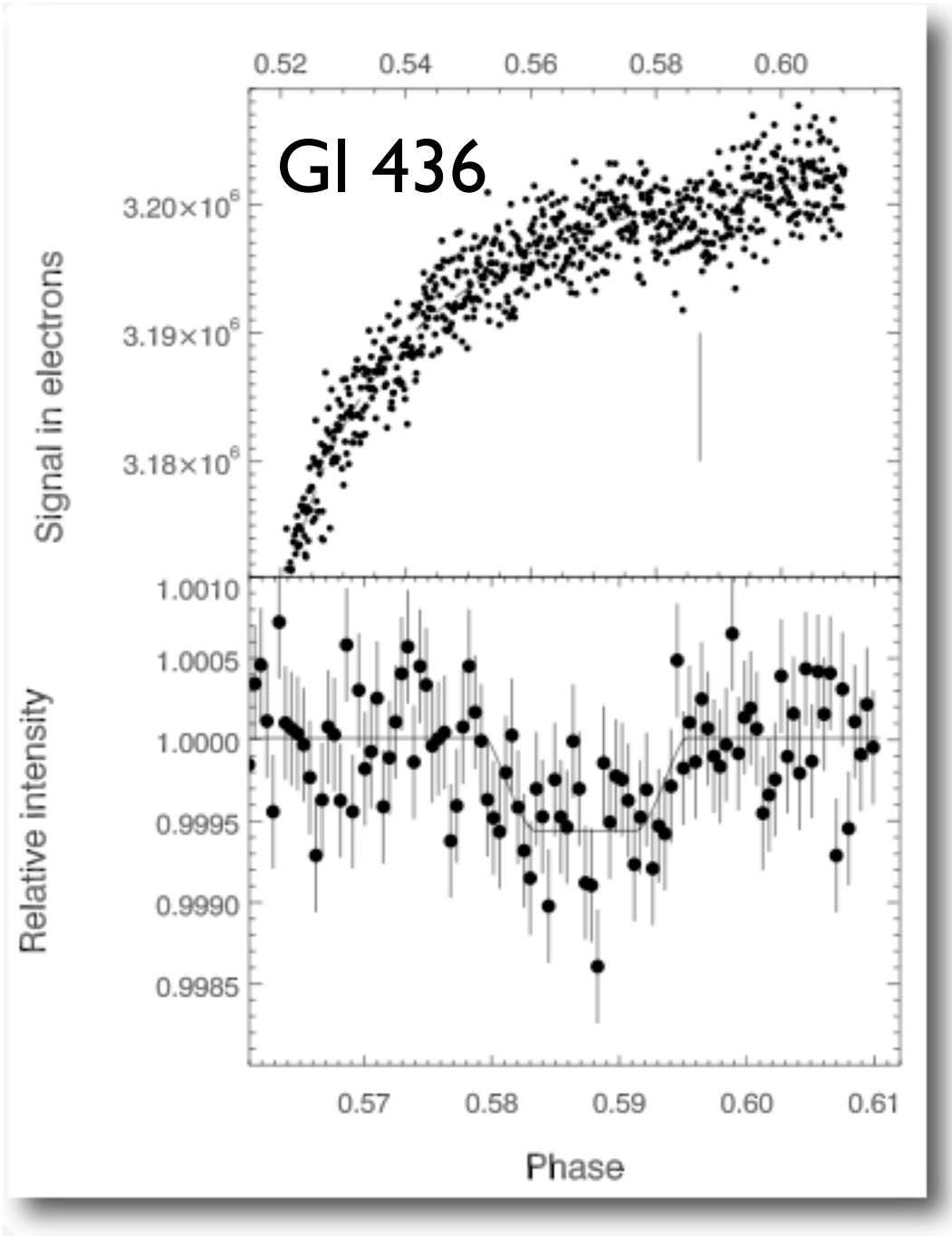
The "art" of transit detection, follow-up and survey design has undergone tremendous evolution

Talks by:
Batalha
Brown
Caldwell
Howell
Jenkins
Pont
Torres
von Braun



	Planet		Orbit				
	Mpl [M_J]	Rpl [R_J]	P [days]	Ttr [JD-2450000]	i [°]	a [AU]	
OGLE-TR-10	0.61 (0.13)	1.122 (+0.12-0.07)	3.101278 (_4)	3890.678 (_1)	87.2-90	0.04162 (0.00069)	[Konacki05]Pont
OGLE-TR-56	1.29 (0.12)	1.30 (0.05)	1.211909 (_1)	3936.598 (_1)	81.0 (2.2)	0.0225 (0.0004)	[K03]Torres04/Po
OGLE-TR-111	0.52 (0.13)	1.01 (0.04)*	4.0144479 (_41)	3799.7516 (_2)	88.1 (0.5)	0.0467 (0.005)	[Pont04]Santos06
OGLE-TR-113	1.32 (0.19)	1.09 (0.03)	1.4324757 (_13)	3464.61665(_10)	88.8-90	0.0229 (0.0002)	[Bouchy04]Bouch
OGLE-TR-132	1.14 (0.12)	1.18 (0.07)	1.689868 (_3)	3142.5912 (_3)	81.5 (1.6)*	0.0299*	[Bouchy04]Gillon
HD189733	1.15 (0.04)	1.156 (0.046)	2.2185733 (_19)	3988.80336 (_23)	85.76 (0.29)	0.031 (0.001)	[Bouchy05]Winn
HD149026	0.330 (0.02)	0.726 (0.064)	2.87598 (_15)	3527.87455 (_90)	85.8 (+1.6-1.3)	0.042	[Sato05]Charbonn
TrES-1	0.76 (0.05)	1.081 (0.029)	3.0300737 (_26)	3186.80603 (_28)	>88.4	0.0393 (0.0011)	[Alonso04]Sozetti
TrES-2	1.198 (0.053)	1.220 (+.045-.042)	2.47063 (_1)	3957.6358 (_10)	83.90 (0.22)	0.0367 (+_12-_05)	[ODonovan06] So
TrES-3	1.92 (0.23)	1.295 (0.081)	1.30619 (_1)	4185.9101 (_3)	8215 (0.21)	0.0226 (0.0013)	[ODonovan07]
HD209458	0.657 (0.006)	1.320 (0.025)	3.52474859 (_38)	2826.628521 (_87)	86.929 (0.010)	0.047 (+.001-.003)	[Charbonneau00]
XO-1	0.90 (0.07)	1.184 (+.028-.018)	3.941534 (_27)	3887.74679 (_15)	89.36 (+.46-.53)	0.0488 (0.0005)	[McCullough06]H
XO-2	0.98 (0.02)	0.964 (+.02-.009)	2.615838 (_8)	4147.74902 (_20)	>88.35		[Burke07]
HAT-P-1	0.53 (0.04)	1.36 (+.11-.09)	4.46529 (_9)	3984.397 (_9)	85.9 (0.8)	0.0551 (0.0015)	[Bakos07]
HD147506	8.17 (0.72)	1.18 (0.16)	5.63341 (_13)	4212.8561 (_23)	90.0 (1.0)	0.0685 (0.0017)	[Bakos07]
WASP-1	0.867 (0.073)	1.443 (0.039)	2.519961 (__18)	4013.31269 (_47)	>86.1	0.0382 (0.0013)	[Cameron06]Shpc
WASP-2	0.81-0.95	1.038 (0.050)	2.152226 (_4)	4008.73205 (_28)	84.74 (0.39)	0.0307 (0.0011)	[Cameron06]Char
GJ436	0.071 (0.006)	0.35 (0.03)	2.64385 (_9)	4222.616 (_1)	86.5 (0.2)	0.028 (0.001)	[Gillon07]

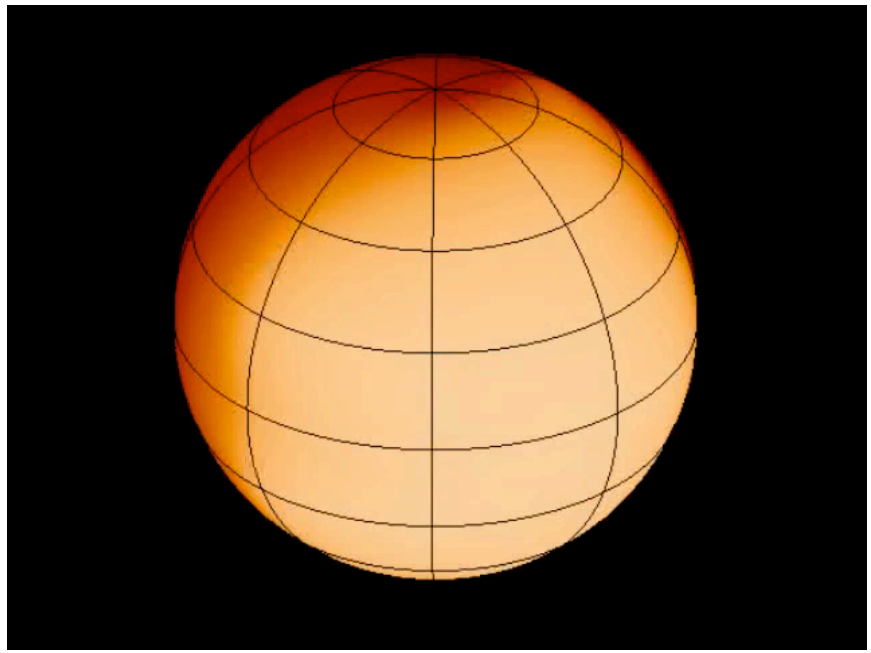
With HAT-P-3b coming during the conference!



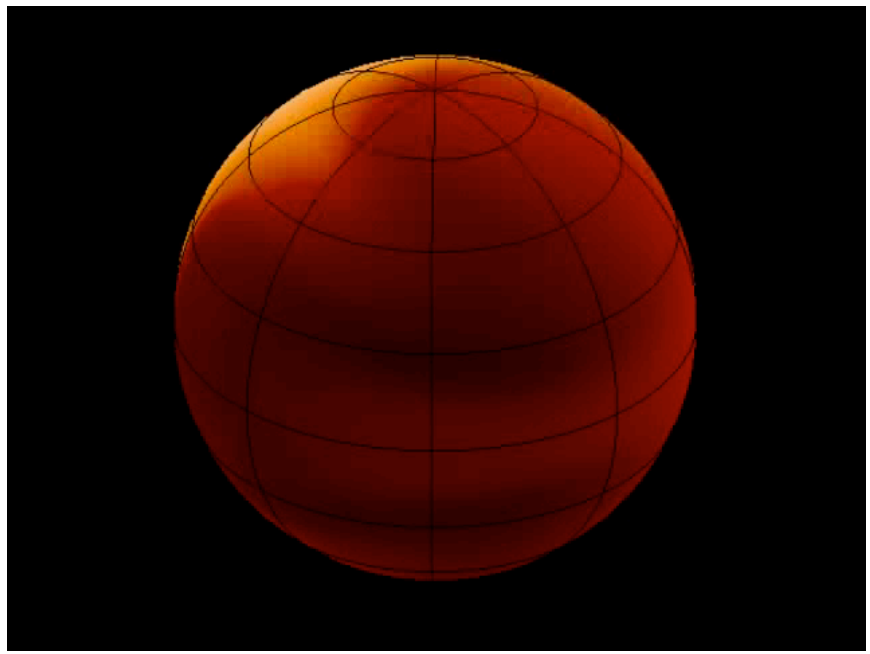
New discoveries and characterizations:

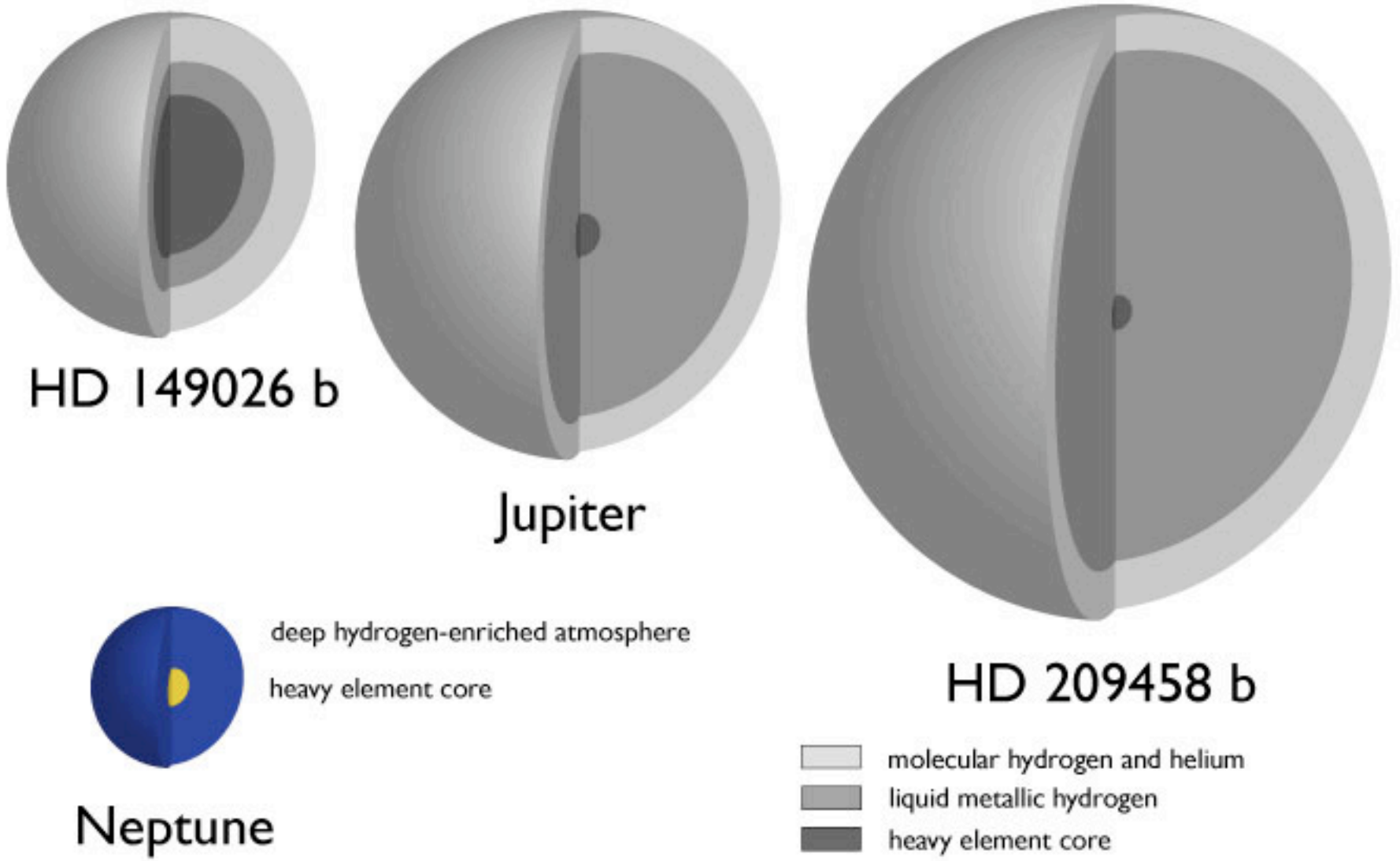
Gillon, Deming

Western Hemisphere

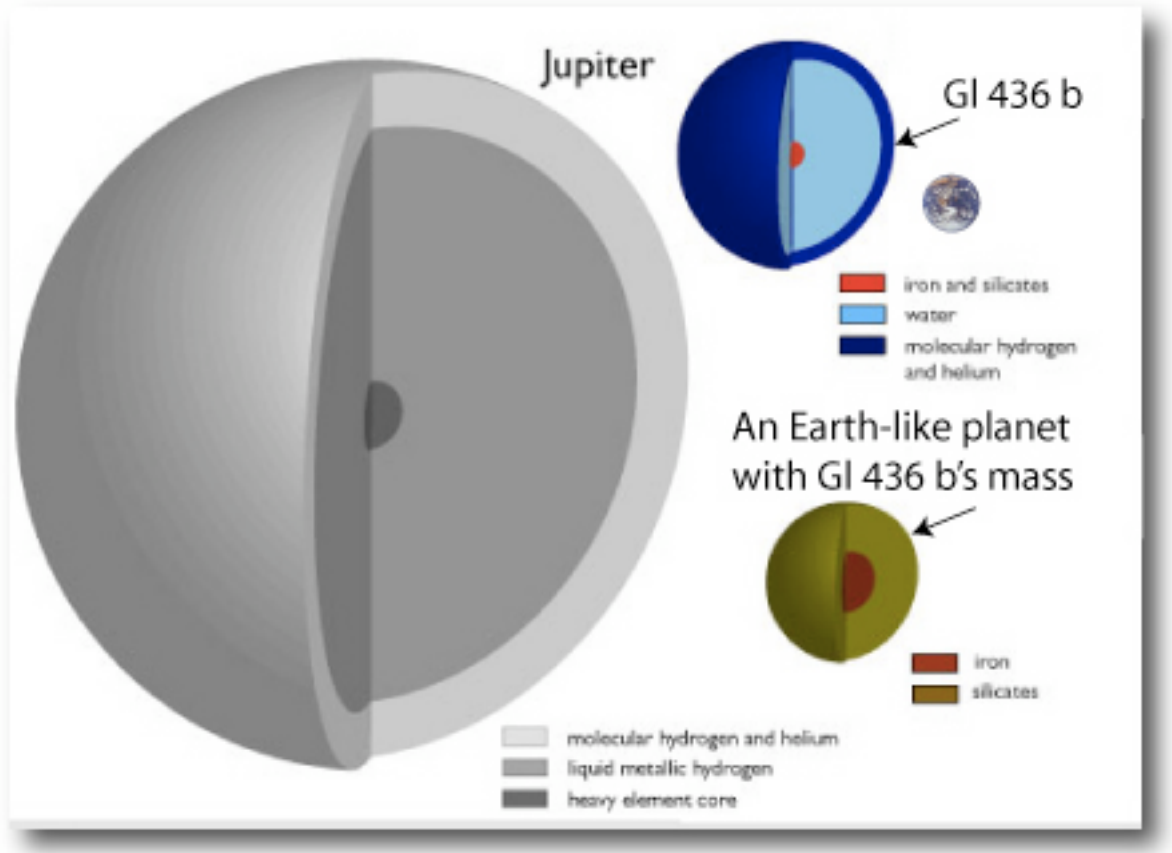


Eastern Hemisphere



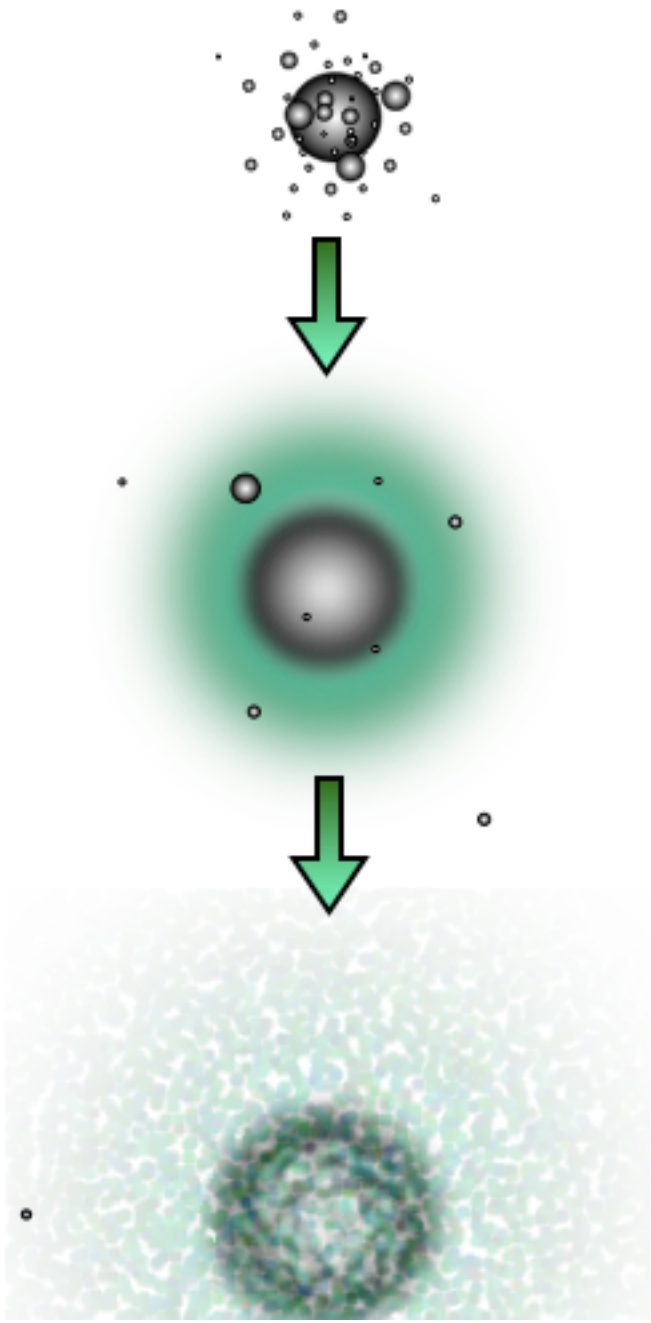


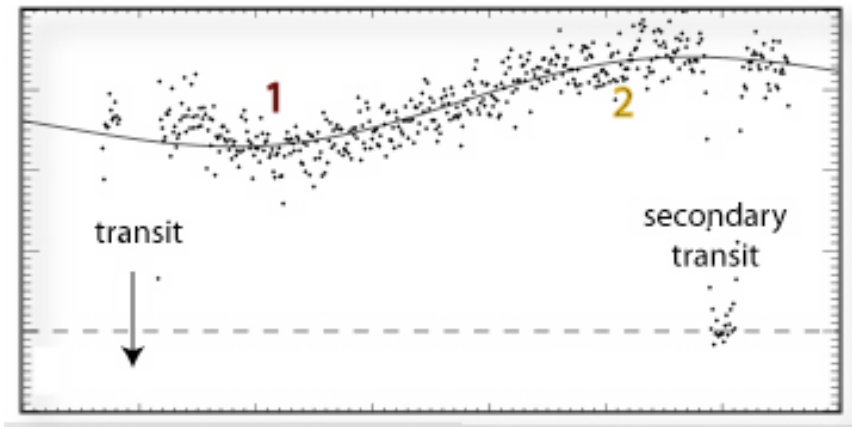
Improved modeling of the wide range of observed giant planet sizes: Fortney, Fressin

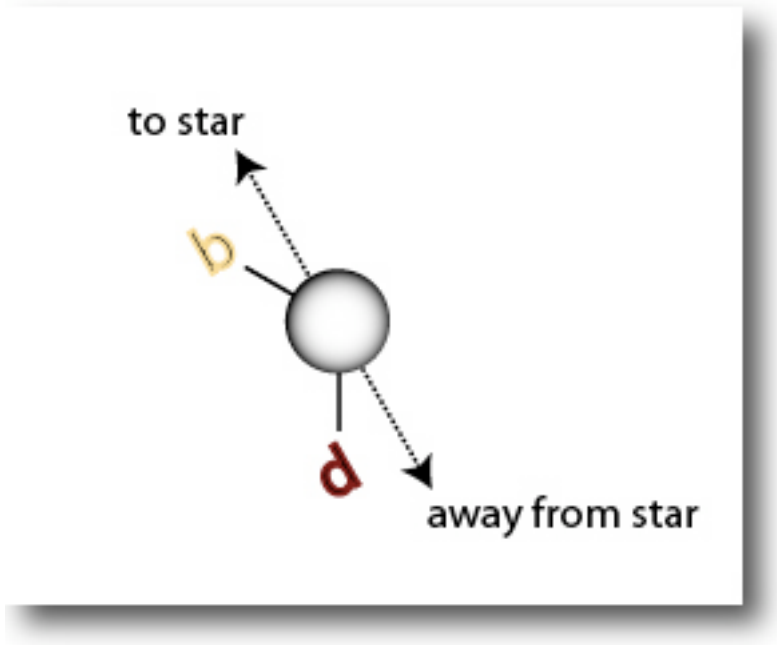


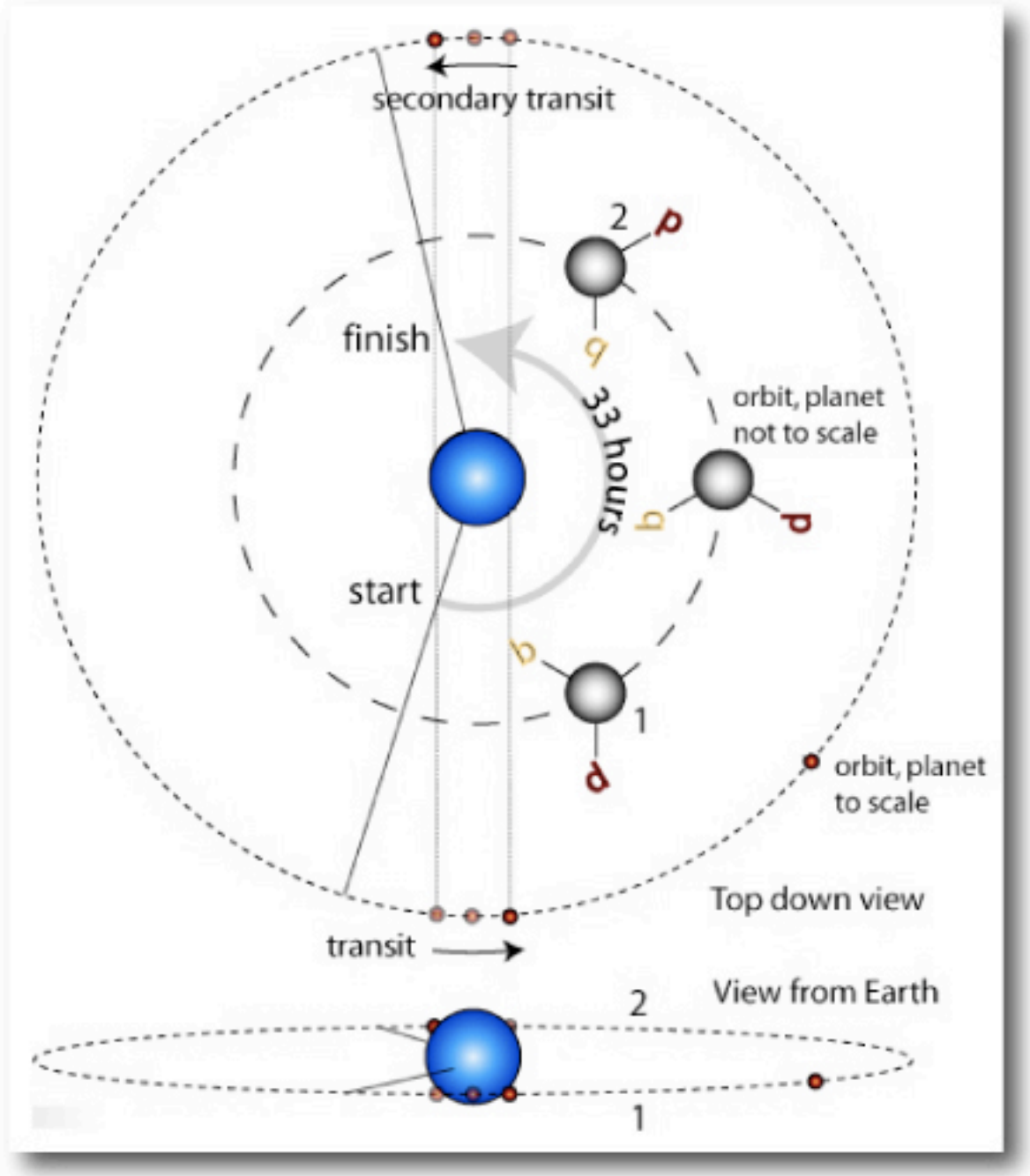
Improved modeling of the wide range of terrestrial and water planet sizes: Seager

Transit observations are providing critical input into planetary formation theory: talk by Lissauer

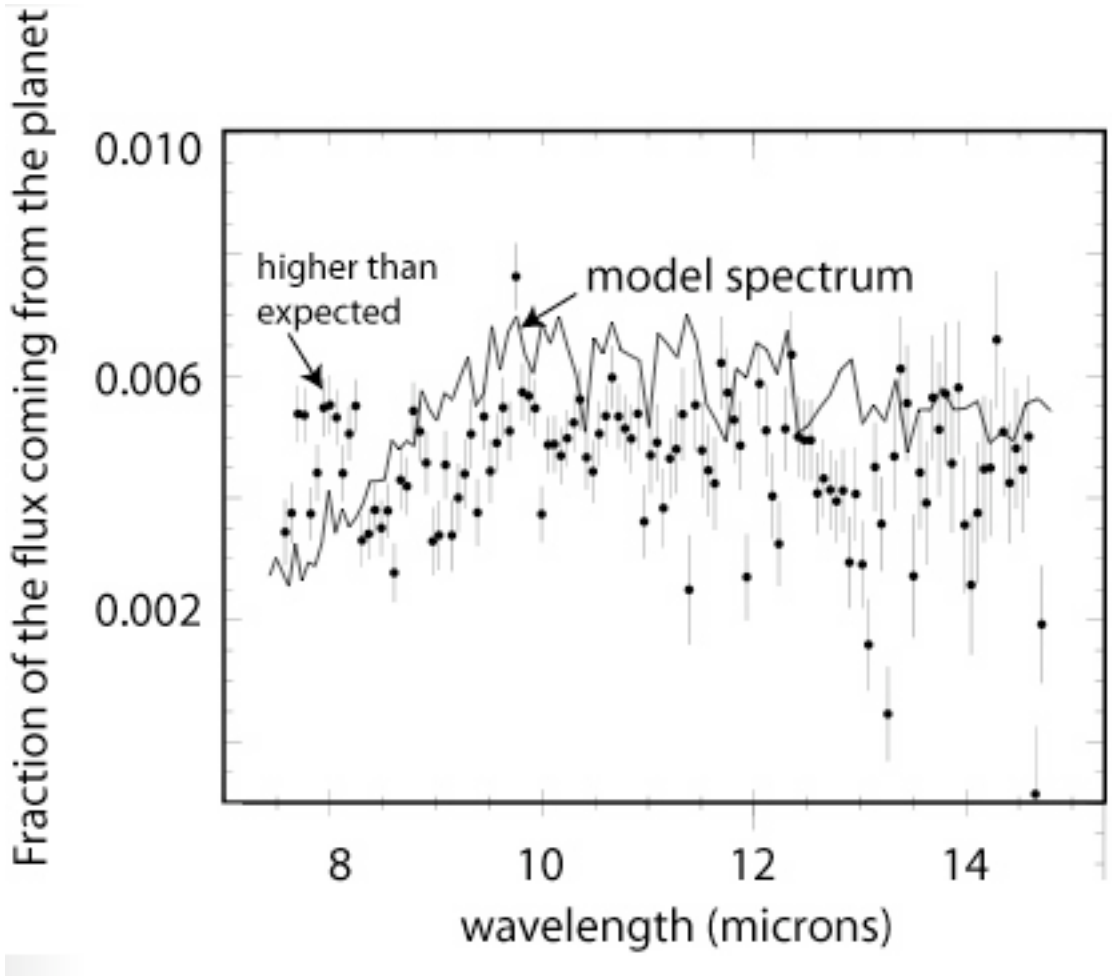




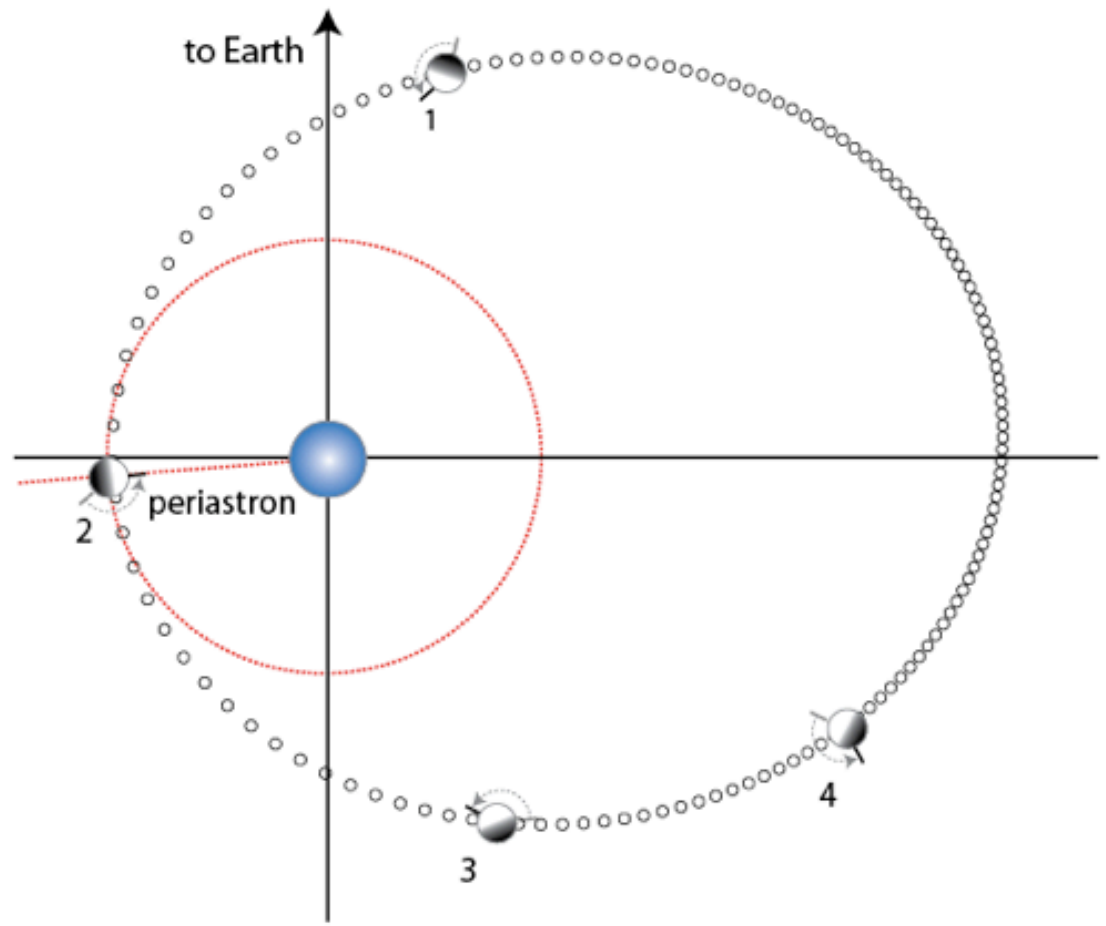


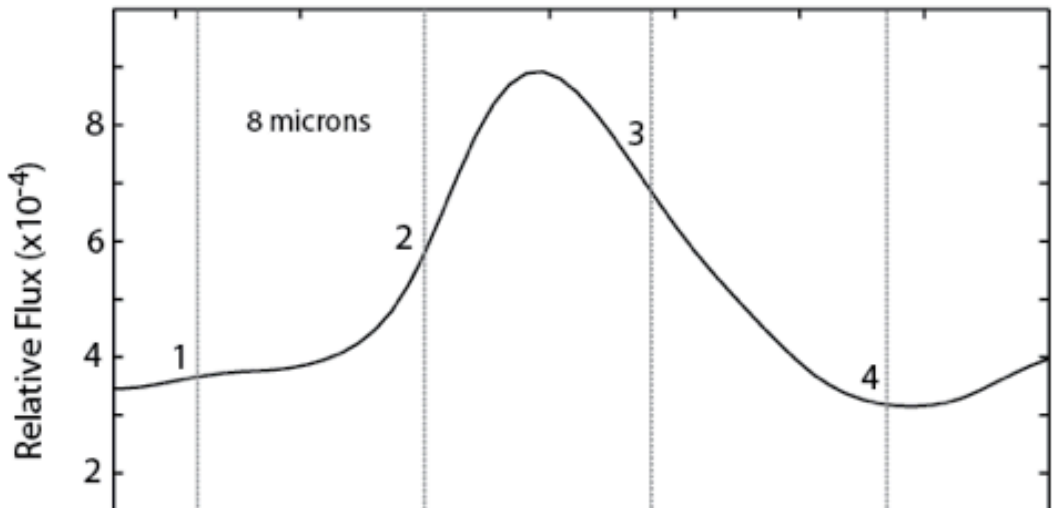


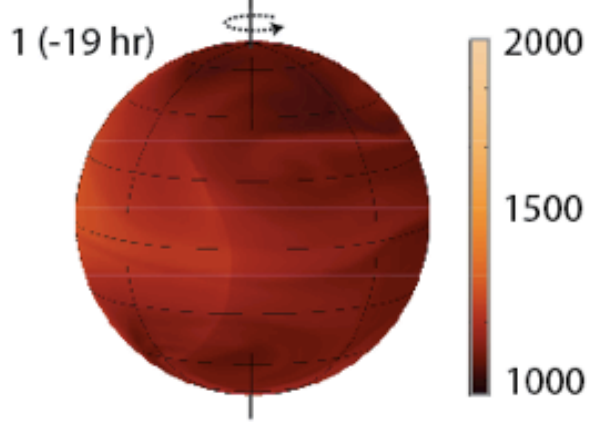
Spitzer is playing an incredible role (talk by Knutson)

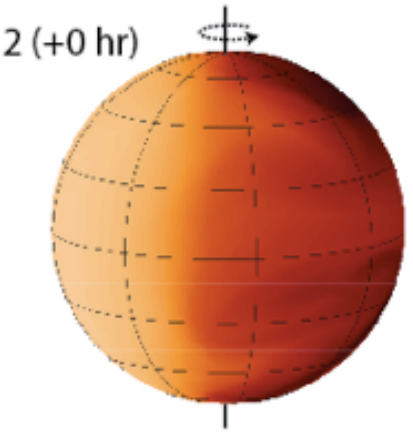


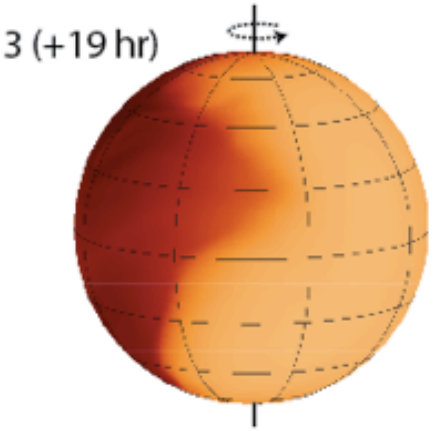
Spectra!
(talk by Seager)

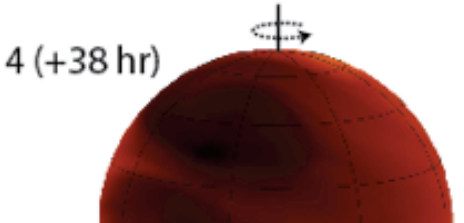

to Earth
1
periastron
2
3
4

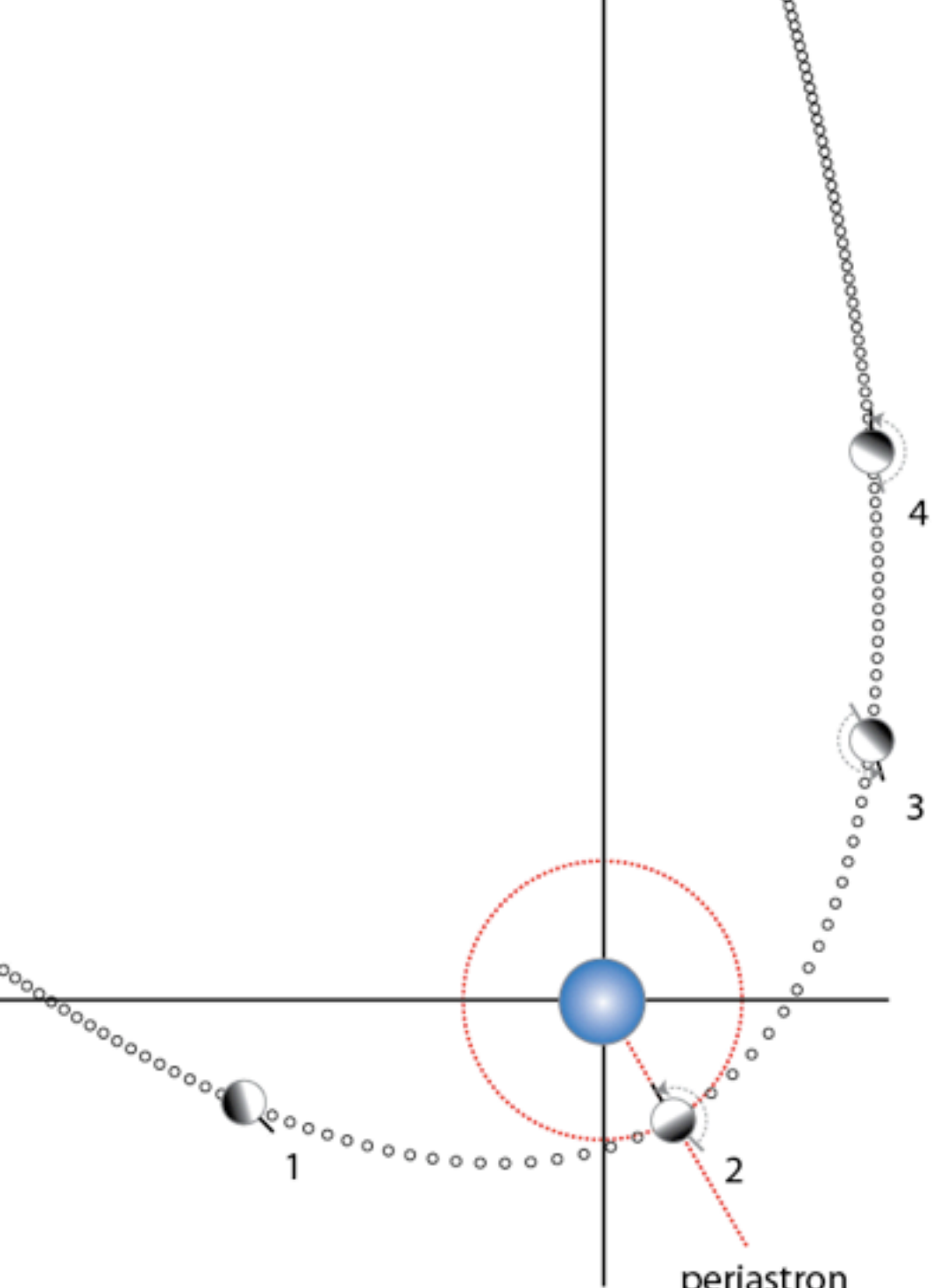

8 microns
Relative Flux (x10⁻⁴)
8
6
4
2
1
2
3
4

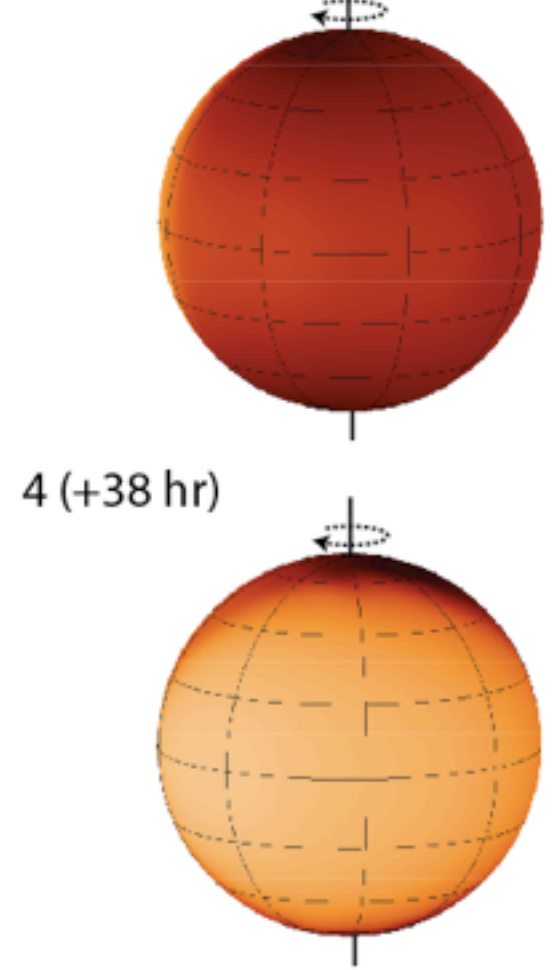

1 (-19 hr)
2000
1500
1000

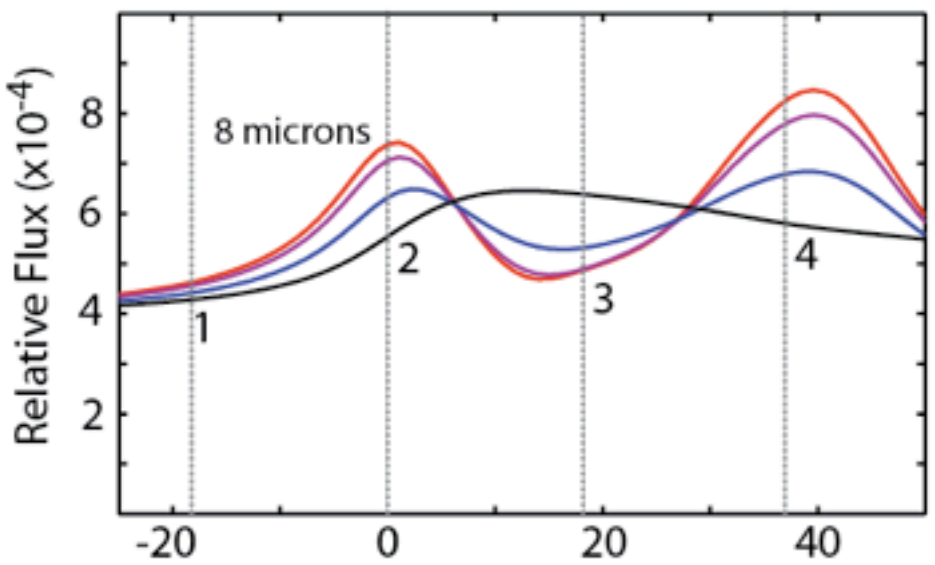

2 (+0 hr)

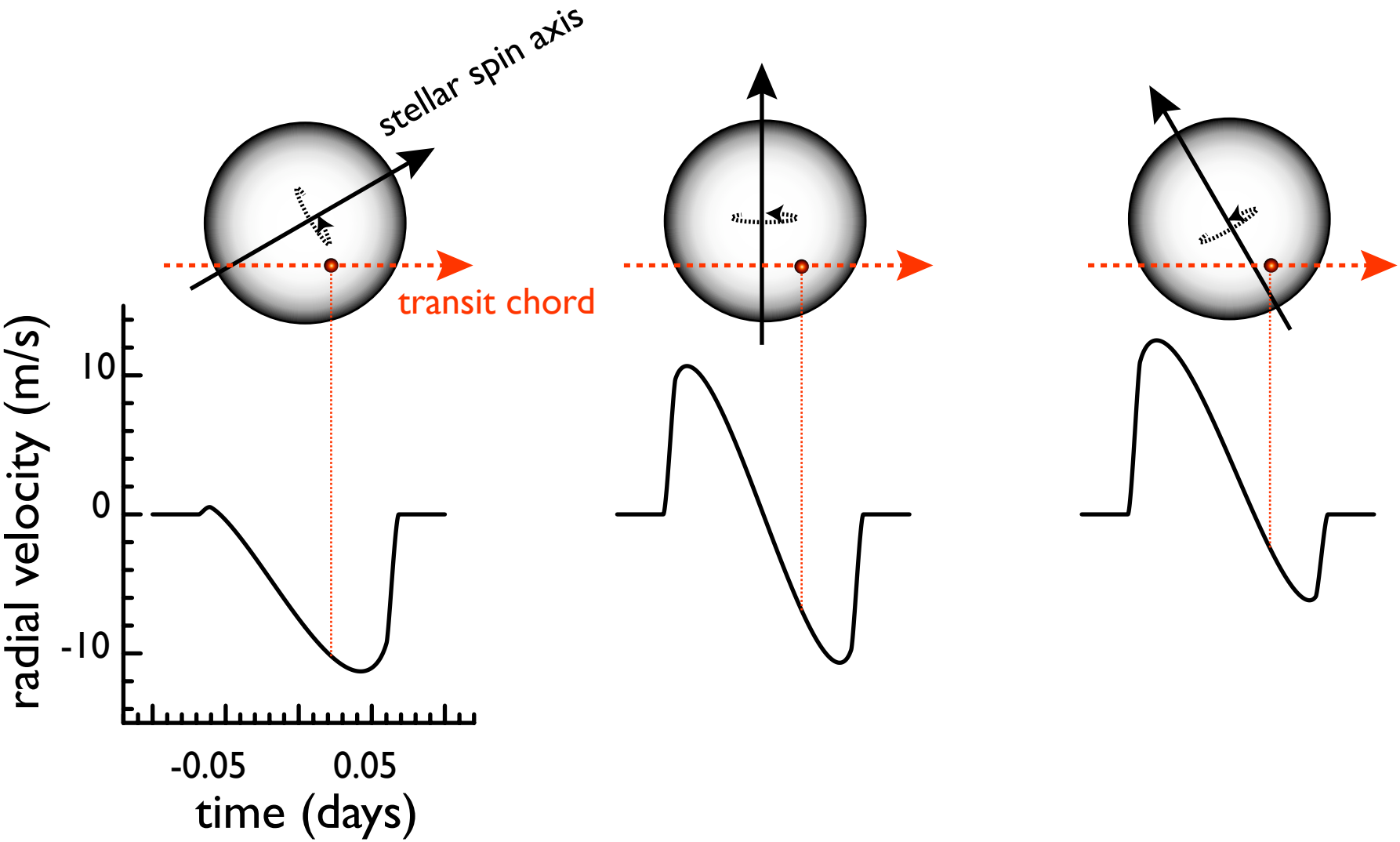

3 (+19 hr)


4 (+38 hr)

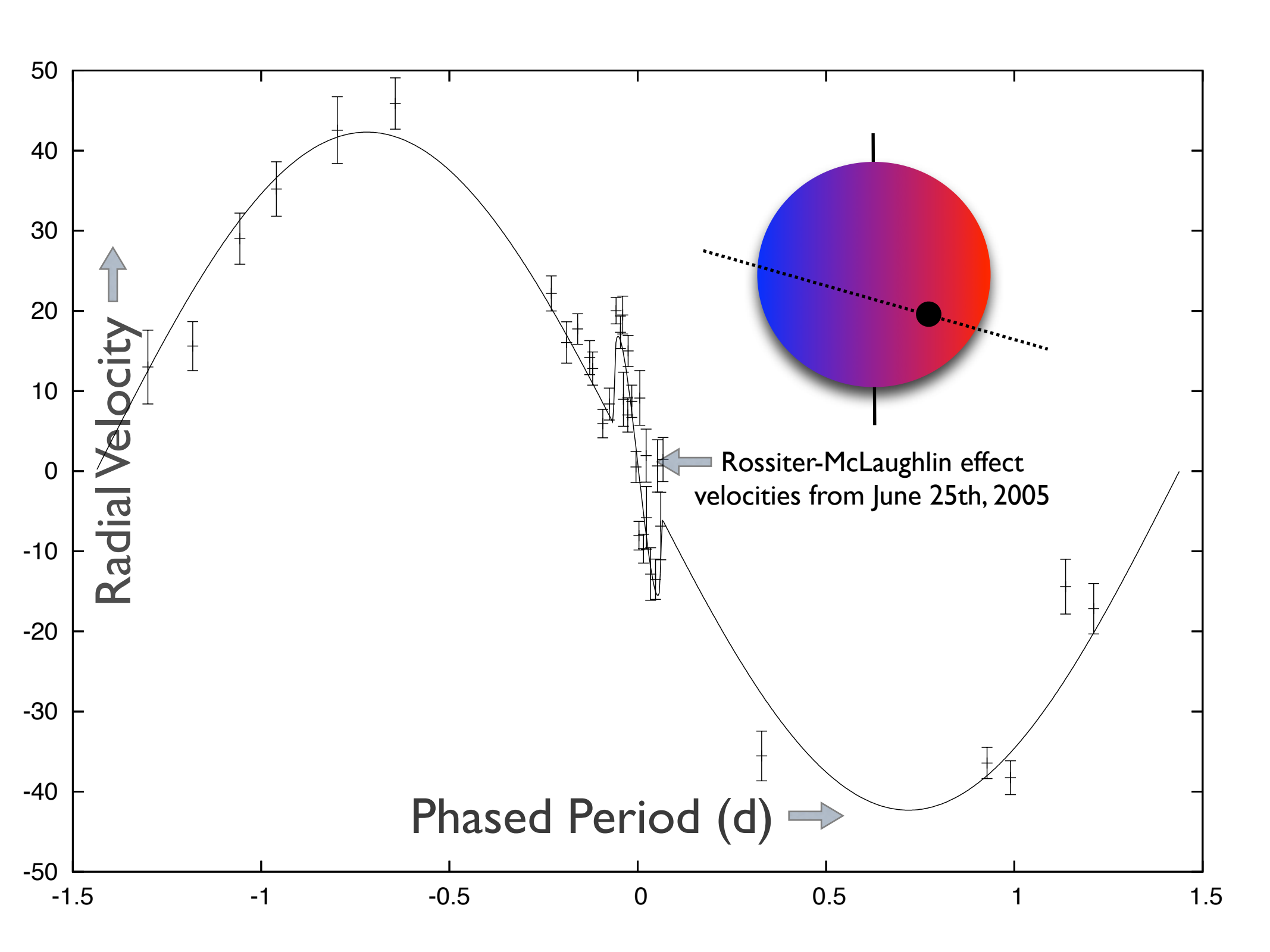

4
3
1
2
periastron

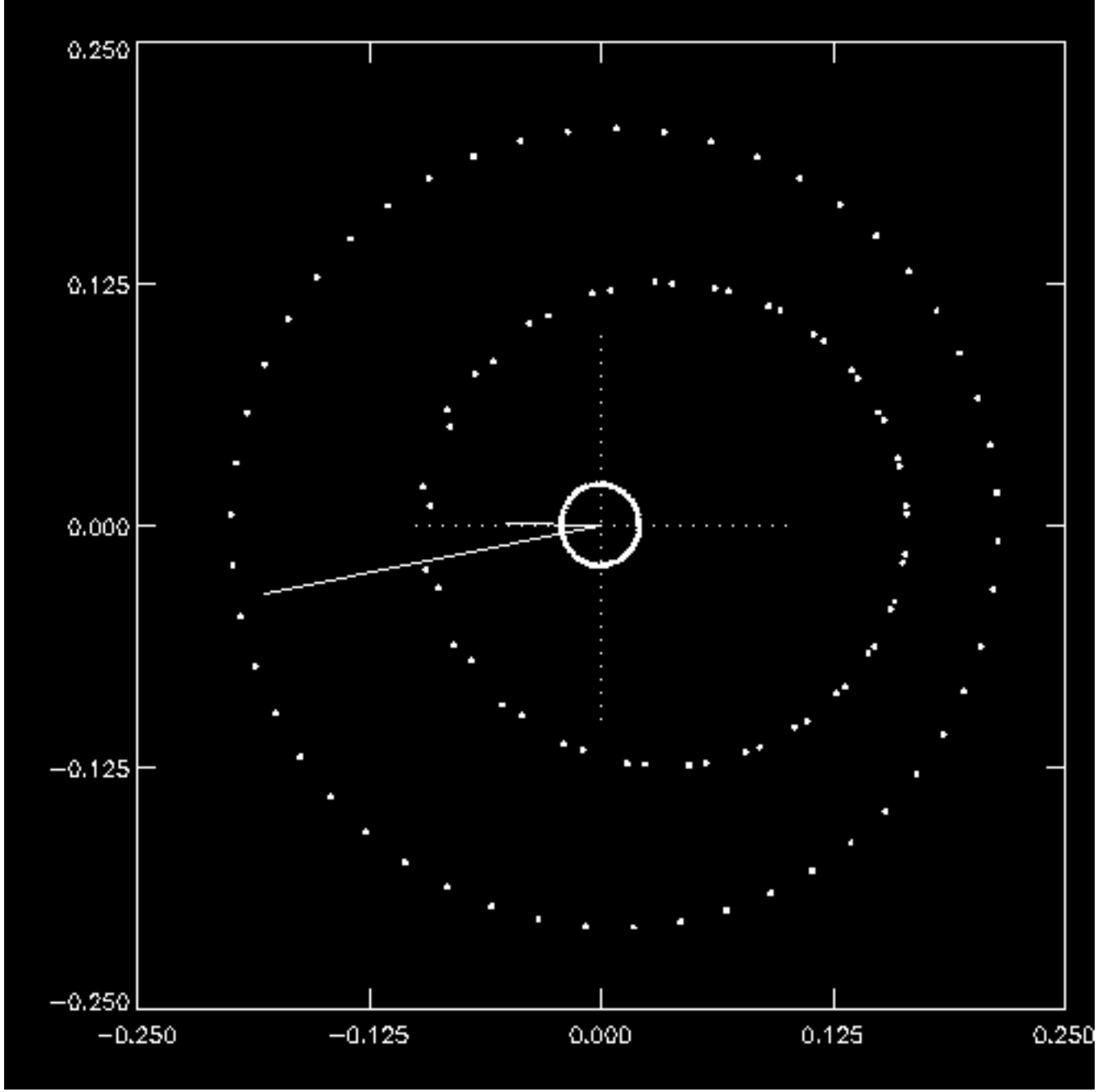

4 (+38 hr)


Relative Flux (x10^{-4})
8 microns
1
2
3
4
8
6
4
2
-20
0
20
40

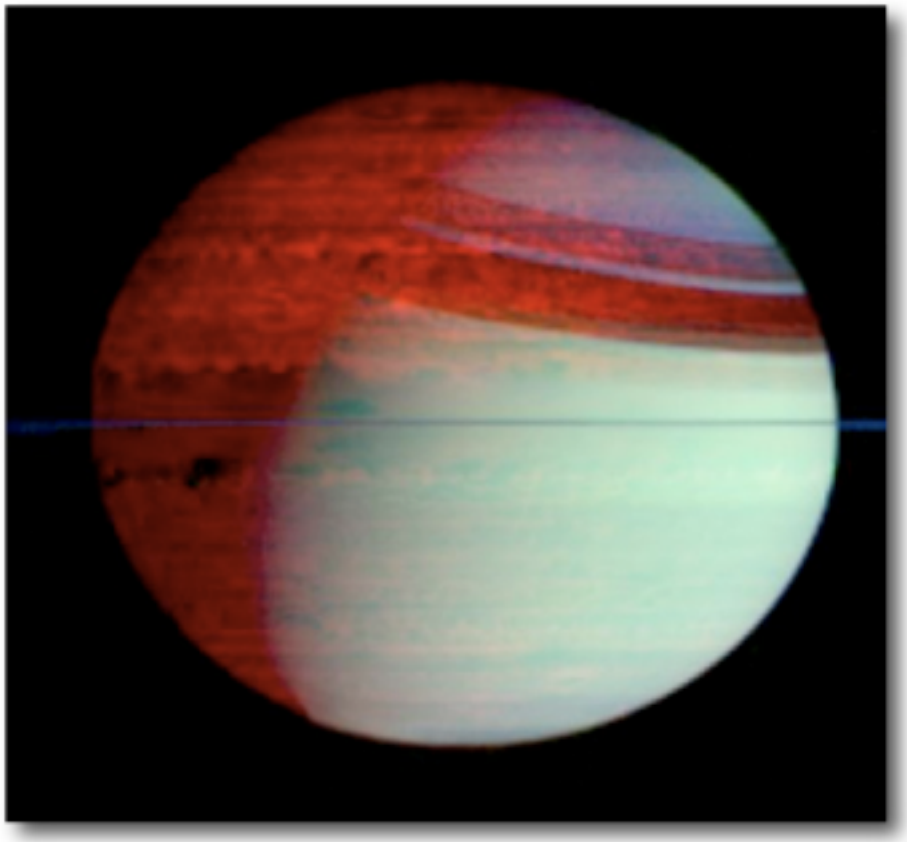


Rossiter-McLaughlin is giving very interesting physical and dynamical information: talk by Gaudi

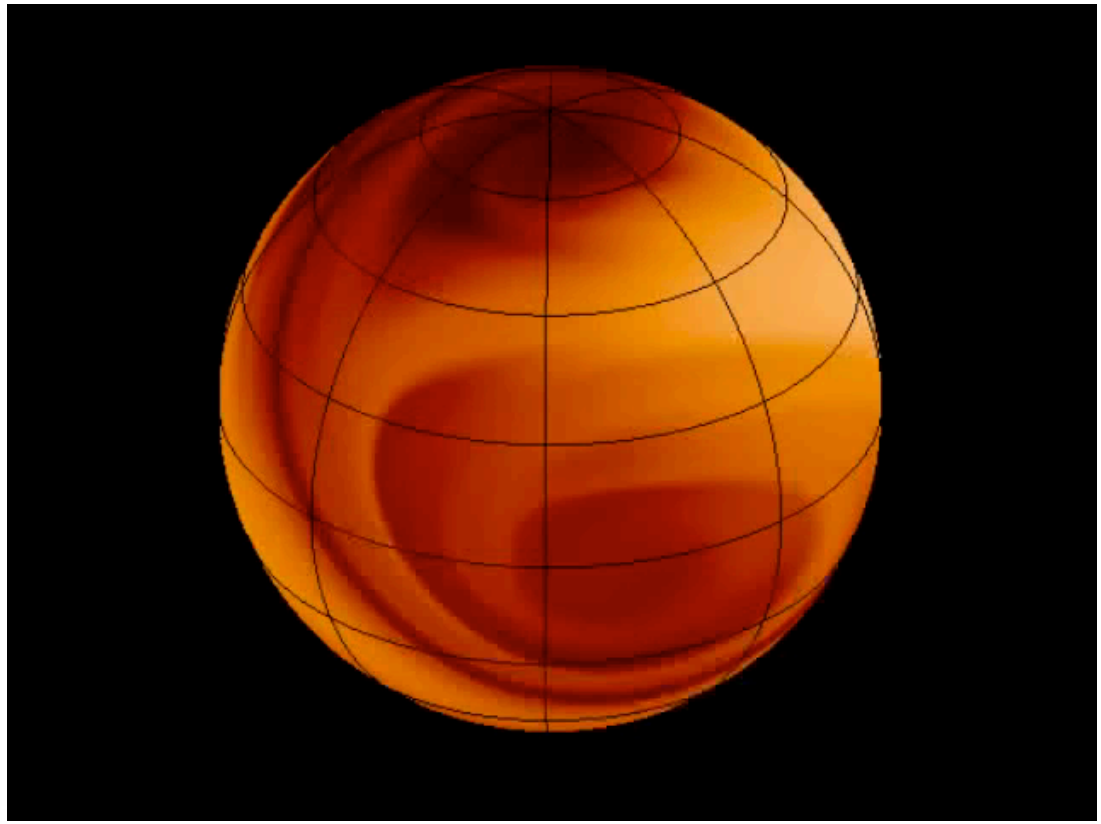

Radial Velocity
Phased Period (d)
Rossiter-McLaughlin effect
velocities from June 25th, 2005
50
40
30
20
10
0
-10
-20
-30
-40
-50
-1.5
-1
-0.5
0
0.5
1
1.5



Transit timing will play an important role.
Talk by Holman

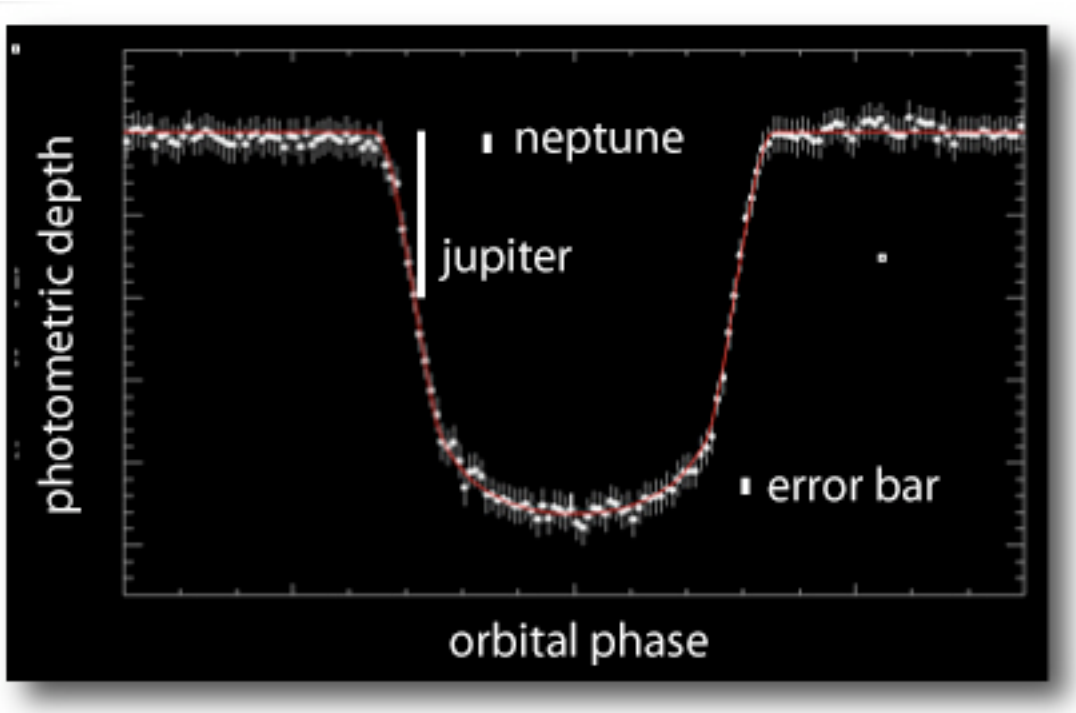


Saturn

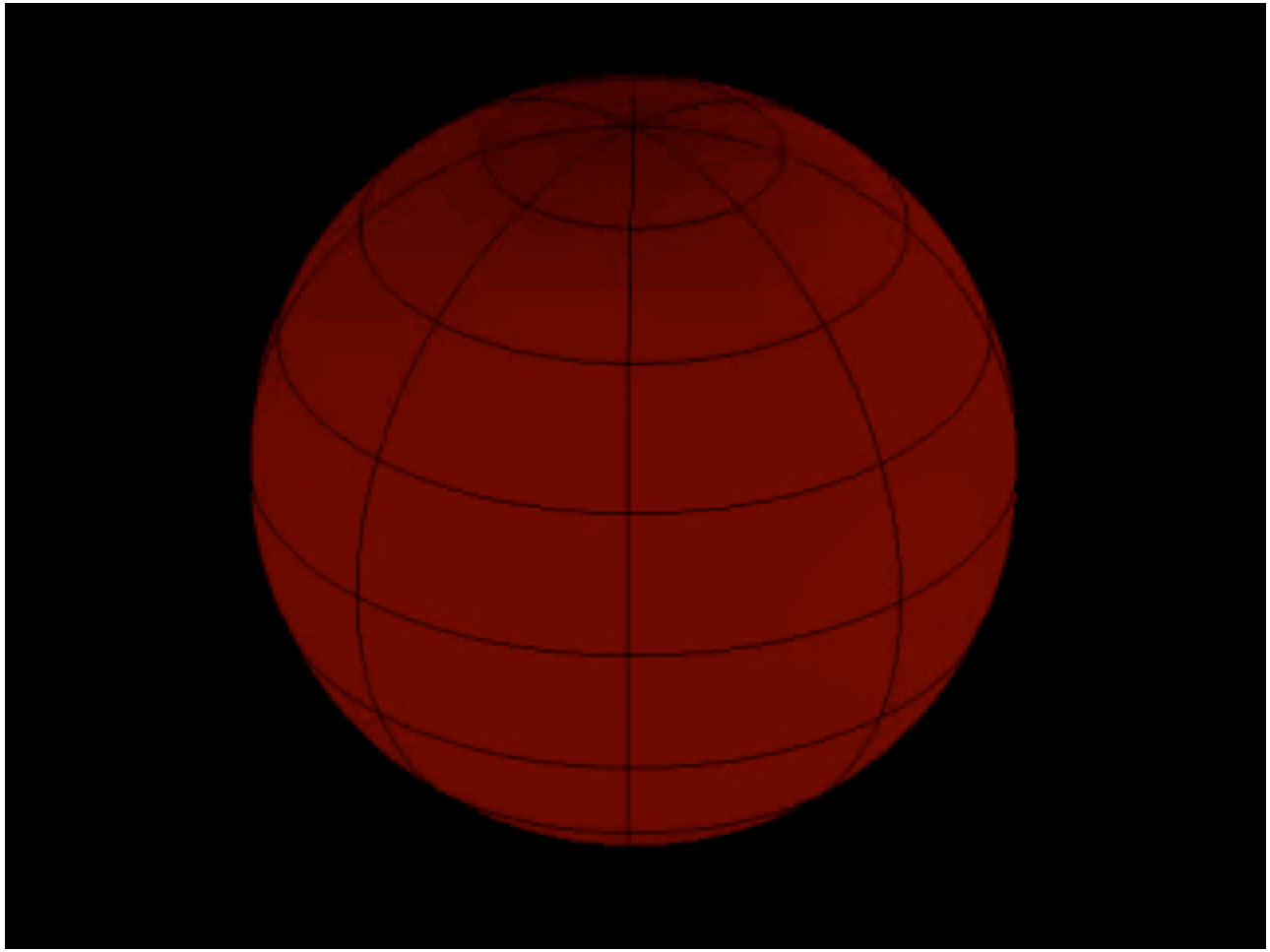


HD 185269

Atmospheres will be radiatively complex and dynamic:
talks by Showman, Marley



Ongoing Space Missions:
CoRoT, MOST, talks by Matthews, Aigrain



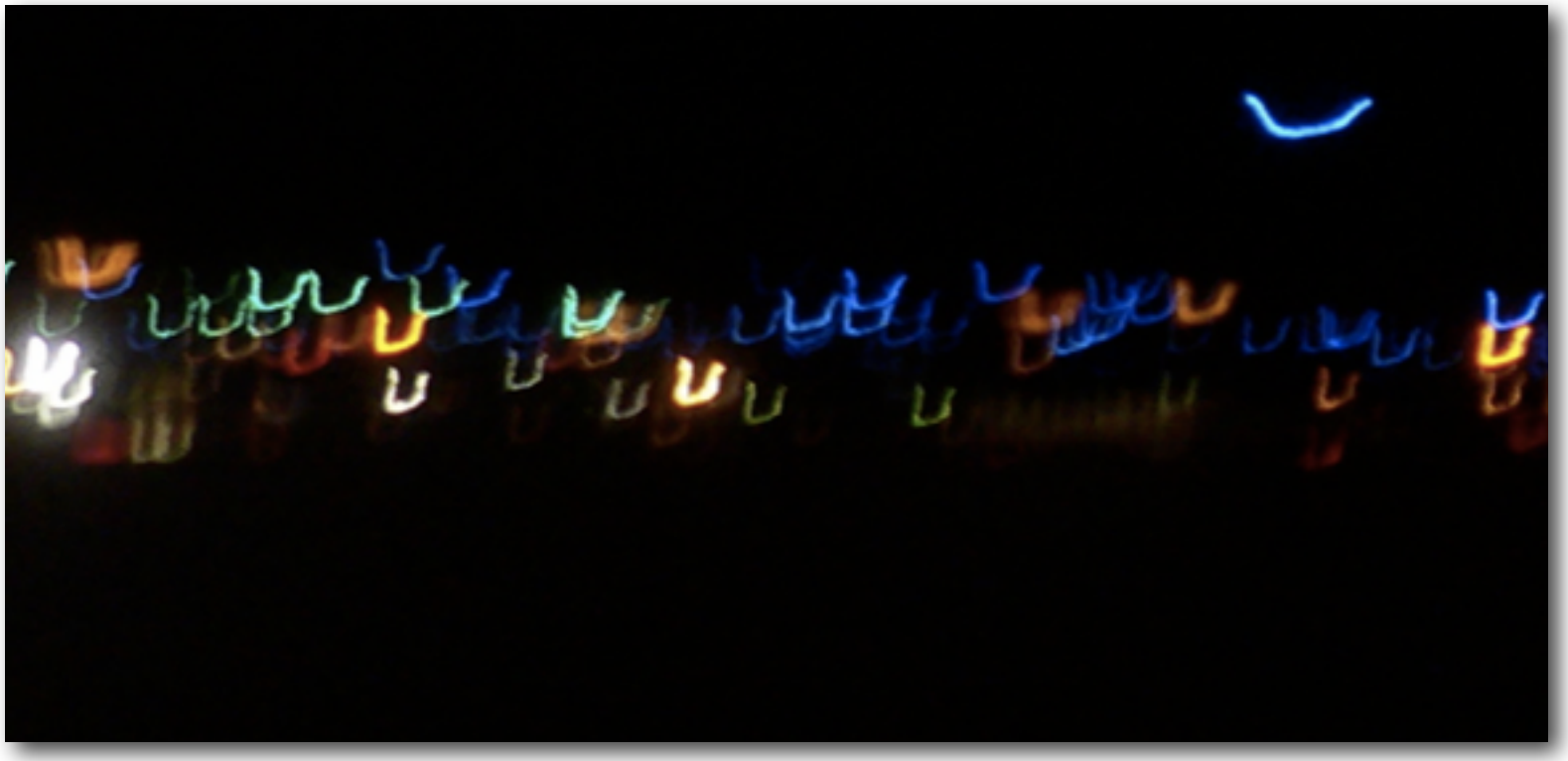
Upcoming Space and Ground Missions, are even more exciting

Kepler: Borucki, Koch

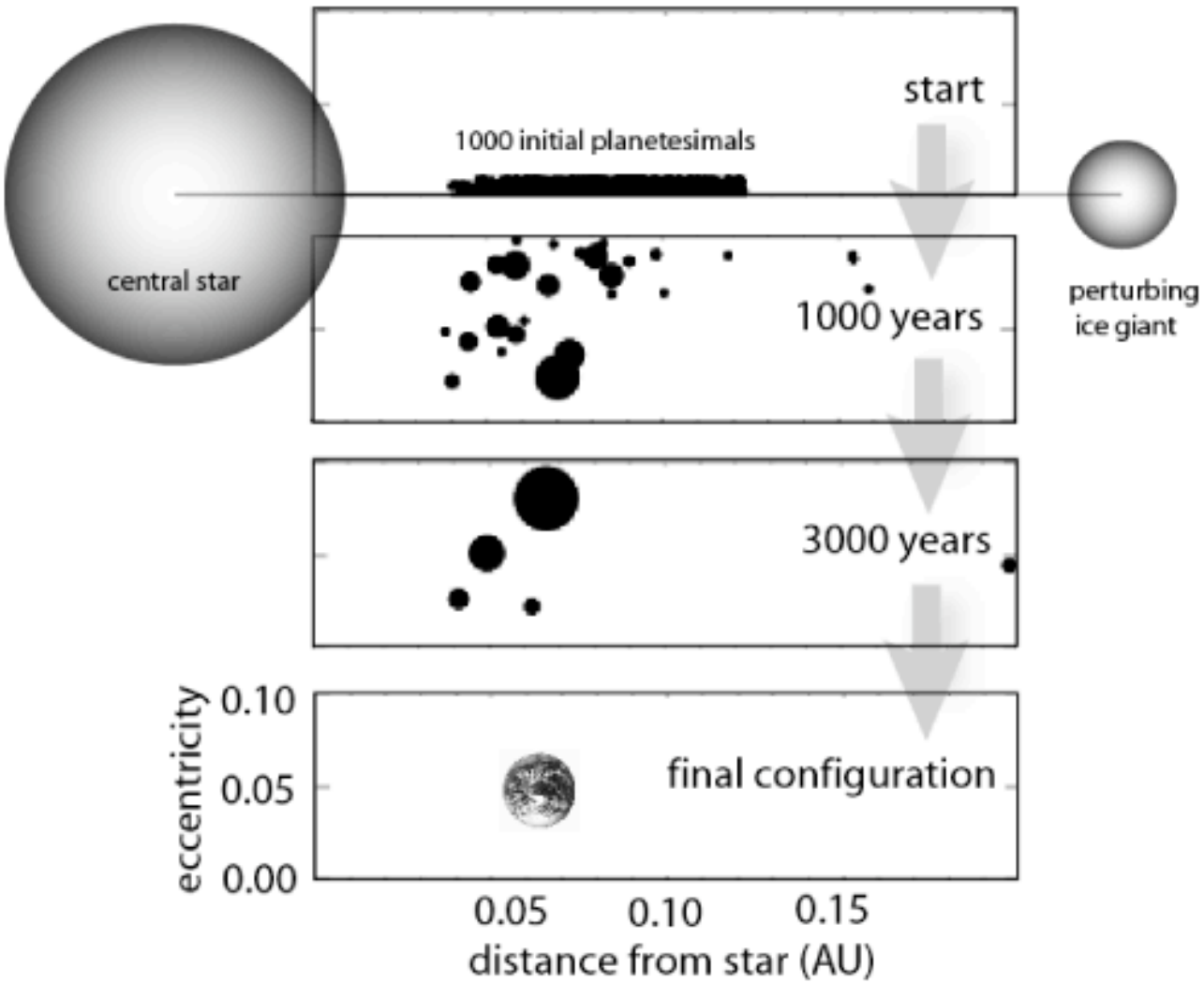
EPOXI/EPOCh: Deming

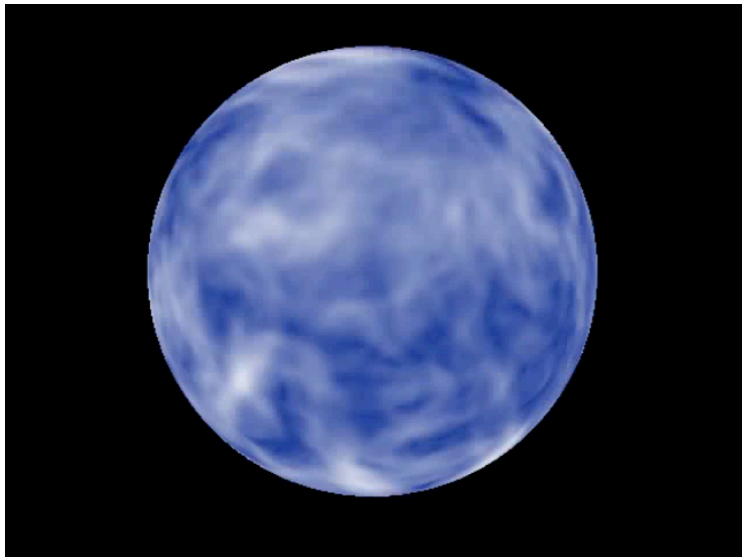
PAN-STARRS: Afonso

Tess: Latham



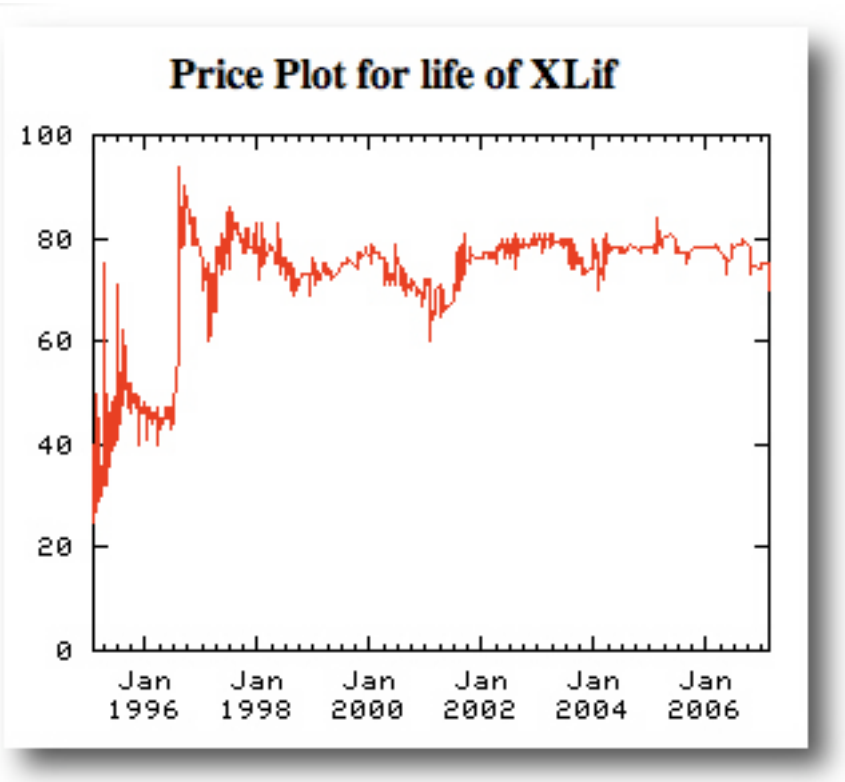
Data Mining: talks by Plavchan, Gilliland, Gaudi



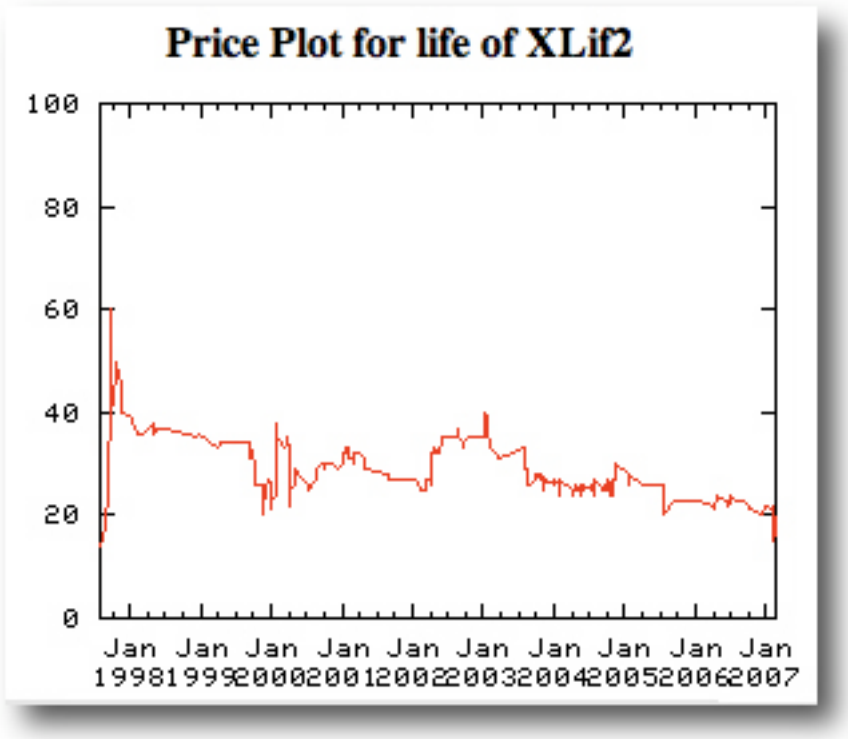


Hydrodynamical simulation of the atmospheric flow on Gl 581

M dwarfs are the wave of the immediate future



Pays 100 dollars if extraterrestrial life found prior to 2050



Pays 100 dollars if extraterrestrial intelligence found prior to 2050

Ideosphere Information Market Price Charts for XLif and XLif2